P. Singer
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SIGNIFICANCE OF BROMIDE IN WATER

1. Bromide affects speciation not only of THMs but also of HAAs. While most of the focus on HAAs in finished drinking water has been directed at HAA5 and HAA6, there are 9 bromine- and chlorine-containing HAAs. Characterization of their occurrence in water, and understanding of the factors influencing their formation and stability is needed.

2. The bromine-containing DBP species appear to have a greater health risk than the corresponding chlorine-containing DBPs.

3. There is a need to predict the levels of DBPs at the consumers' tap. Predictive models, if available, can be used for purposes of improved exposure assessment in epidemiology studies.

4. Most of the focus on lowering DBP levels has been on precursor removal processes, e.g. coagulation, GAC adsorption, membrane separation. These processes remove TOC (NOM), thereby lowering overall halogenated DBP formation. However, in many cases, the concentration of the bromine-containing DBP species is unchanged. As a result, there may be little benefit in risk reduction associated with these TOC removal processes in bromide-containing water.

5. Ozone, a more potent disinfectant than free chlorine, reacts with bromide in water to produce brominated DBPs and bromate. Bromate control is especially difficult, especially as higher doses of ozone are applied for purposes of Cryptosporidium inactivation. Even low levels of bromide in water can be of concern at Cryptosporidium inactivation doses.